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# Intercultural and digital competence in teacher training from an international perspective: Poland, Portugal, Slovakia, Spain and Russia

## La competencia digital e intercultural en la formación del profesorado desde una perspectiva internacional: Polonia, Portugal, Eslovaquia, España y Rusia

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### Resumen

Este artículo presenta un estudio procedente del proyecto europeo IRNET, una red universitaria que persigue el desarrollo de nuevas herramientas y métodos para el avance pedagógico de la Tecnologías de la Información y la Comunicación, el e-learning y la competencia intercultural. Con este trabajo pretendemos explorar la aplicación de políticas nacionales e internacionales innovadoras respecto a la competencia digital e intercultural en la formación del profesorado y en concreto, el desarrollo de prácticas educativas innovadoras. Otro objetivo de este trabajo es además identificar dichas prácticas y/o proyectos de investigación puestos en marcha en cada país para el fomento de la competencia digital e intercultural en España, Polonia, Eslovaquia, Portugal y Rusia. Desde una perspectiva comparada, basada en el paradigma cualitativo, se han analizado tres unidades de comparación que han permitido, entre otras cosas, prestar atención en el impacto de los proyectos financiados con fondos europeos o nacionales hacia estas temáticas, como promotores del cambio y la innovación relativa a la formación intercultural y las tecnologías digitales. Finalmente, se observa que las tendencias con respecto a la formación del profesorado reflejan la necesidad de alcanzar un perfil docente que reúna destrezas que integren modelos interculturales desde la búsqueda conjunta de la escuela del futuro, donde las redes virtuales y las comunidades virtuales de aprendizaje son recursos indispensables.

### Abstract

This article presents one of the studies from the European project IRNET, a network that pursues the development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences. We intend to explore the application of international and national policies of innovative, digital Education and intercultural competences in teacher training, as well as innovative educational practices. Another objective of the project is also to identify such practises and/or research projects in order to foster intercultural and digital competences in Spain, Poland, Slovak, Portugal and Russia. From a comparative perspective and on a qualitative paradigm, we have analyzed three comparative units that have allowed, among other things, us to look at the impact of projects financed with European or national funds as promoters of change and innovation related to intercultural training and technologies information. Finally, it has been observed that teaching trends point to a professorship endowed with skills that integrate intercultural models from the joint search for the school of the future, and for that online networks and virtual learning communities are key resources.



## 1. Introduction

The tour of key competences for lifelong learning in the European Union, starting with the recommendation of the European Parliament and the Council of Europe that echoes the Official Journal of the European Union (30th December 2006). And eight key competences, which states that «are those which all individuals need for personal fulfilment and development, and for active citizenship, social inclusion and employment» are established. Although «key competences related to language, reading, writing, numeracy and information and communications technology (ICT) is an essential foundation for learning», occupying an important place digital competence. In this document this competence is described as «the confident and critical use of technology information society (IST) for work, leisure and communication».

With regard to teacher training in digital competence, we can say that numerous previous studies on knowledge, attitudes, perceptions, beliefs and/or practices of teachers on new technologies as they were called in the 80s and 90s, therefore begin with practicing teachers and initial training, and lately have focused on studying the digital competence of teachers in initial formation. In the case of initial teacher training in intercultural education, we cannot say that the research conducted so far is of a significant number. Notably the work of Garcia Lopez (2002), who found that the competence's presence in the curriculum in Spanish universities was not enough, taking into account all the professional performance of teachers in multicultural contexts. Indeed, authors like Borrero *et al.* (2011) justify the need for an intercultural curriculum in teacher education, that encourages equal opportunities for all groups represented in society and demands a respect for pluralism within a democratic framework decisions, dialogue and communication between different groups social.

However, there are few papers that delve into the problems of combining teacher training in digital and intercultural competence at the same time but there are some experiences (Borrero & Yuste, 2011), so it is not very abundant literature in the Spanish and/or European context that refer to digital and intercultural competence by teachers in initial or continuing training, although there are the administrations at various levels who themselves have already begun to engage in political actions and create legislation that make it possible to deepen work in this emerging field.

Under this paradigm, IRNET the European project is presented (*International Research Network for the study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences*) a IRSES supported by Marie Curie Actions initiative, aims to help research organisations to either set-up or strengthen long-term cooperation. This study is part of the fourth IRNET work package of the project, which aims specifically to identify and define profiles of virtual campus, virtual learning environments and virtual synchronous classrooms, to characterize methodological and technological aspects of multimodal didactic communication and to emphasize the overall methodological aspects of VCR with a special focus on online tutoring, online continuous evaluation and good teaching practices.

## 2. Objectives

Framed in the fourth IRNET work package of the project through this article we propose to explore the application of international and national policies in digital and innovative Education and intercultural competences in teacher training. Another objective of this paper is to identify innovative educational practices and/or research projects in order to foster intercultural and digital competences in Spain, Poland, Slovak, Portugal and Russia.

### 3. Methodology

At the methodological level, this study presents a comparative perspective, following Raventos (1983) research, it consists of a base comparison from a comprehensive system of interrelations which aims to shed light and clarify the educational issues from different perspectives. From a scientific point of view of a working methodology of pedagogy that aims, among other purposes, compare sources, situations, institutions, education systems worldwide, of theory and practice, and to compare the plots or aspects of them.

So the methodology used in this study was a qualitative methodology because it is considered the most appropriate to our subject matter, although comparatists combine elements, analysing in detail the studies and policies on the subject in question to extract more indicators significant, using qualitative techniques. The comparative method, helps contrast the descriptors extracted from the selected studies, to determine their relative importance within each country and in the whole European Union as well as to deepen the comparison units for data collection.

The process of collecting and analysing data (categorization and inclusion of information from the comparison units) was as follows:

1. Identification of countries participating in the data collection. Participants in this study were the following countries: Spain, Poland, Slovak, Portugal and Russia
2. Design of the comparison units. Comparison units are:
  - a) Application of international policies or Initiatives in digital and intercultural competences in Education and in teacher training.
  - b) Implementation of national policies from the government or Initiatives in digital and intercultural competences in Education and in teacher training.
  - c) Innovative educational practices and / or research projects in order to foster intercultural and digital competences in university training.
3. The method of data collection: analysis has been made of legal documents concerning policies implemented, educational experiences in research and impact items, then the results were pooled.
4. Data analysis: data was analyzed by categorizing according to the comparison units, seeking and establishing relationships between such initiatives and causing enrichment through divergent policies or initiatives.

### 4. Results

The results of this comparative investigation are set so that once each of the units of comparison has been marked, it offers an answer to them, reflecting on the most significant of each of the countries surveyed contributions: Spain, Poland, Slovakia, Portugal and Russia

*4.1. Comparison Unit 1.) Application of international policies or initiatives in digital and intercultural competences in Education and in teacher training between Spain, Poland, Slovak, Portugal and Russia.*

1. A) Poland: Among European documents and programs to support the development of ICT and e-learning are the following items: The Bologna Declaration (1999), The Lisbon Strategy (Lisbon, 2000),

The Copenhagen Declaration (Copenhagen 2002), Education in Europe: the different systems of education and training - common goals for 2010 (Luxembourg 2002). Also legislation concerning. Learning throughout life. European Commission working document «*Memorandum on lifelong learning life*» (Brussels, 10/30/2000, SEC (2000) 1832), the Communication from the Commission on «Realising the concept of learning throughout life» (Lifelong Learning) (Brussels, 21.11.2001 COM (2001) 678) and Communication from the Commission «Investing efficiently in education: an imperative for Europe» (Brussels, 10.01.2003 COM (2002) 779). The Digital Agenda for Europe 2013-2014<sup>1</sup> analyses and describes in particular Entrepreneurship and digital jobs and skills, and in this documents it is stressed that «the Commission signals that by 2015 700,000 to 1 million ICT jobs will not be filled in Europe, due to lack of skilled personnel. Additional action is needed to boost the overall number and the employability and mobility of ICT experts. Therefore the Commission will launch a 'Grand Coalition on Digital Skills and Jobs'».

1.B) Portugal: Digital competences started to be officially supported in the beginning of the 90's when an ISDN line with no costs for the schools was placed in several elementary and secondary schools to allow the access to the internet by students. This initiative was very successful and allowed that teachers and students could have effective use of emergent technologies supported by the Portuguese Government. In 2004 began the migration process from ISDN line to broadband DSL lines. The whole process was concluded in the end of 2005, giving schools the ability of sharing the internet amongst students and teachers. In 2006, and specially directed to the higher education institutions, a new project called «*e-U Campus Virtual*» (*electronic University Virtual Campus*) started with several public and private Universities. Universidade Lusíada de Lisboa was among the first one to adhere to this project. This project aimed to create a national wireless network called e-U that could be accessed by all members of the participant Universities wherever they would be. This allowed the roaming of teachers through the Universities. Later in the same year (2006) the e-U has integrated the European network eduroam, being the third network to adhere and for a long time the largest network in eduroam project. At the moment eduroam, in Portugal, counts with the presence of 61 higher education institutions, being possible either for students and teacher to roam all over Europe, wherever there is an institution that have adhered to the eduroam project and access to several services provided by the host institution.

1.C.) Slovakia: The European Committee accepted a new Digital Agenda for Europe in 2001. Regarding this agenda, the Slovak reform was initiated in 2008. The need for the introduction of a new reform rooted in the fact that Slovak educational system was up until September 1 2008 operated according to an untimely and outdated law introduced as early as 1984. The Ministry of Education of Slovak Republic redefined the system of schools in Slovakia and also defined a new system of education adapted to the international standard ISCED in the form of the State Program of Education. The schools run under the same content curriculum (state educational program), which they can supplement with their own content (school educational program).

1.D) Spain: The Ministry of Education in Spain, through the *Spanish Agency for International Cooperation for Development* (AECID)<sup>2</sup> -in collaboration with other international institutions- is developing a number of cooperation programs in Latin America. Primarily these are focused on Information and Communications Technologies. An example is the *Latin American Network of Educational Technology* (RIATE)<sup>3</sup>, an organization committed to cooperation, innovation and development. It deals with a meeting place for generating content to enrich the Latin American digital educational heritage. At the same time, it is aimed to apply ICT to education as a tool of improving teaching and learning quality.

<sup>1</sup> <https://ec.europa.eu/digital-agenda/en/news/digital-do-list-new-digital-priorities-2013-2014>

<sup>2</sup> <http://www.aecid.es/EN>

<sup>3</sup> <http://www.riate.org>

These initiatives work towards the acquisition of the full digital competence in the country. So ICT become in learning objects and basic tools in Education. Hence, actions are aimed at different sectors involved into a permanent development. According this idea, in order to strengthen national educational system, the following cooperative activities are being developed: emphasize the use of ICT in teacher training, content sharing, technical advice, support for digital management, fostering of a common digital educational heritage and promotion of digital networks for educational cooperation. At the university level, the *Spanish University Rectors Association*(CRUE)<sup>4</sup> is working on the international dimension of the Spanish university in ICT issues, as one if its strategic developments.

*4.2. Comparison Unit 2.) Implementation of national policies or initiatives from the government in digital and intercultural competences in Education and in teacher training between Spain, Poland, Slovak, Portugal and Russia.*

2.B) Poland: Decree No. 66/2012 formally allows one to teach up to 60% of classes in the remote mode. Increase in the number of e-learning courses, and greater activity in distance teaching. Organization of lifelong learning courses and trainings – also in the form of e-learning in Polish and English – in the use of electronic databases for students, doctoral candidates and employees. Using and developing modern computer and information technologies for more individualized education in the form of e-learning and blended learning (*Development Strategy 2012-2020*). Maintaining high ethical standards in research and compliance with the best practices code (*Development Strategy 2012-2020*). Implementation of a zero tolerance policy on plagiarism and other unethical behaviours (*Development Strategy 2012-2020*). Comparison of human and educational factors. Individualized education in the form of e-learning and blended learning (*Development Strategy 2012-2020*). Using and developing modern computer and information technologies for more individualized education in the form of e-learning and blended learning; (*Development Strategy 2012-2020*). Making the University of Silesia's infrastructure available for events important for the Region and Country (*Development Strategy 2012-2020*). Standards of education. Preparing for the teaching profession (*Law on Higher Education, ACT of 27 July 2005 Article 9c.*). One solution to problem of preparation of IT specialist in Poland is the delivery of the project B2.2. «The development of national occupational standards of competence required employers», which deals with the development of standards of professional competence for 300 innovative profession. The project is being jointly implemented by a number of institutions and state-run and private organizations, including the *Institute for Sustainable Technologies, National Research Institute* (Radom), *IPiSS WYG International*, and other organizations. In the context of the challenges and problems facing modern Europe, the project is especially important and necessary. The project will develop standards of qualifications, particularly for modern innovative professions as «*Multimedia applications teacher*», «*E-learning teacher*», «*Examiners on-line*». Eugenia Smyrnova-Trybulska, who is involved in the project as an expert, promotes the basic pre-provisions relating to the concept of the development of competency standards for a new profession called «*Multimedia applications teacher*» and «*Methodology of distance learning*». Finally, is fair to say that educational politics is also based on appropriate knowledge of the art of implementing what is possible among the postulates expressing the interests of different social groups. This gains significance in the culturally diversified environment, where educational politics should be especially focused on. Unfortunately, educational politics in Poland is one of the most neglected/abandoned fields of education.

1.B) Portugal: In Portugal, with the dissemination of new technologies, most of the students gained a permanent access to the internet. Also, there were fiscal benefits for buyers of new technologies

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<sup>4</sup> <http://www.crue.org>

equipment (computers, notebooks, netbooks, etc.) so almost every home has at least one computer. Also, communications become cheaper and faster, and with the spread of DSL or cable technologies almost all country was covered by a fair Internet connection. With the initiative of FCCN (*National Foundation for the Scientific Computation*) all the major internet operators created a special connection called the «PIX» (*Portuguese Interchange Group*) that allowed that all communications that had origin and destiny in Portugal could be routed directly without having to go to the operators international routers. This measure allowed a faster communication within the country allowing that the academic network could connect with the commercial networks thus allowing that teachers and students at home, with their private access to the Internet could easily access the materials at their disposal in the academic network, without the lag of routing through international networks. With a good infrastructure for Internet access, there were launched several courses for qualified unemployed that would allow them to acquire competences in new technologies in order to return to the labor market with new competences. With the spread of *eduroam*, and with the definitions of the minimal services that should be provided many higher education institutions developed new services and, of course, both teachers and students started to use more and more equipment (i.e. laptops, netbooks, tablets, smartphones) and the use of technology has improved in a positive way amongst the higher education users.

1.C) Slovakia: Implementation of Information and Communication Technologies (ICT) into the educational process enabled the teachers in the last decade to use these tools at primary and secondary schools for the benefit of the students – to develop their knowledge and skills. Using of ICT tools was conditioned by execution of a project of transformation of traditional school into a modern, so called Global school of the third millennium. The first national project was the Inforek project which successfully started the process of ICT implementation on Slovak primary and secondary schools in 1999. The project was mainly focusing on integration of ICT (multimedia computers) into the educational process and connecting of the schools to the Internet. Starting in the academic year 2008-09, a complete school reform was introduced in Slovakia, which significantly changed the content of education. Therefore, as a part of a new reform, a new law was introduced and approved, the Act of pedagogical and professional employees in continual learning, credits and attestations of pedagogical employees and professional employees and also the Act of the National Council of the Slovak Republic about lifelong learning active from 1.2.2010. In the line with this Act, a complex preparation of teachers and creation of a modern educational process was covered by the national project *Inforek 2*. An example of continuous education of teachers within the lifelong education aimed at development of knowledge and abilities in the area of implementation and active usage of ICT in education was project DVUI (*Ďalšie vzdelávanie učiteľov základných a stredných škôl v predmete informatika - Further education of the teachers of primary and secondary schools in the subject of Informatics*) executed in 2008-2011.

2.D) Spain: Spain has an active policy to promote the training of teachers and teacher trainers in the use of ICT for educational purposes, also to remove barriers linked to the language competence in foreign languages, especially in English. We would like to emphasize in this regard the *School 2.0*. Of The Ministry of Education, Culture and Sports, which was the last project of integration of Information Technology and Communication (ICT) in schools. The aim was to launch digital classrooms of the twenty-first century in which we enhanced connectivity and the technological infrastructure of classrooms. This program has tried to create digital classrooms, providing ICT resources for pupils and schools. For its effectiveness, it has been fundamental to ensure Internet connectivity and interconnectivity within the classroom for all teams and to promote teacher training in both the technological and methodological aspects and social aspects of integration of these resources in their practice daily teaching. With regard to this program, we would stress that Area *et al.* (2014) state that today there is no policy or alternative program to the *School 2.0 Program* to promote, in coordination

between regions, the integration processes of ICT in the Spanish school system. On the other hand, with the country's economic crisis it seems to have reduced the number of grants for the acquisition of technological resources and connectivity of schools. On the other hand, at the university level in the *Spanish University Rectors Association (CRUE)*<sup>5</sup> they emphasize some strategic lines on the international dimension of the university in ICT issues.

1.E) Russia: In Russia there are several national initiatives, concerning digital and intercultural competence in education generally (Kommers, Smyrnova-Trybulska, Morze, Noskova, Pavlova, Yakovleva, 2013). For example, Federal law «*On education*» officially provides the ability to use e-learning and distance learning technologies. Organizations engaged in educational activities are able to use e-learning and distance education technologies in the implementation of educational programs. State Educational Standards regard to develop ICT, media, ethical, social and cultural competences. Federal Initiative «*Our New School*» names the main characteristics of students as citizens: innovative solutions, the ability to choose a professional way, the willingness to learn throughout life. Also, this initiative names the main trends of education modernization and innovative development: school infrastructure, teachers training, inclusive education. Strategy 2020 introduces the concept of long-term development of Russia. One of the trends is the orientation of ICT on the development of human capital (e.g. education). New e-learning teacher's abilities have been allocated (Noskova, Yakovleva, Pavlova, Morze, Drlík, 2014). They include: the ability to communicate using advanced technologies; the ability to present an academic material with the use of remote technologies and new educational environments; the ability to motivate students to e-learning; the ability to include students in the process of e-learning; the ability to quickly establish contacts in the medium of e-learning; the ability to manage e-learning course; the ability to adapt to the individual needs of students; the ability to be innovative in the use of advanced technologies; the ability to create educational content for e-learning; the ability to adapt the methods and means of innovative e-learning. The following technologies are widely used in teacher training in Russia: educational portals, digital libraries and institutional repositories, management of educational content, streaming technology, electronic evaluation and assessment, wireless technologies and mobile devices, peer communication and dialogue, open educational content, online modelling, computer and online games, tools for synchronous online presentations, Web 2.0, etc.

4.3. Comparison Unit 3.) *Innovative educational practices and/or research projects in order to foster intercultural and digital competences in university training between Spain, Poland, Slovak, Portugal and Russia.*

3.A) Poland. Fostering international cooperation at the Faculty of Ethnology and Science of Education, in particular, through international projects. Distance learning platform<sup>6</sup> used for fostering international cooperation, in particular, through international projects. International project supported financially by *International Visegrad Funds (IVF)* «*E-learning – as a road to the communication in the multicultural environment*» (Coordinator Eugenia Smyrnova-Trybulska), which has been successfully implemented by University of Silesia, the Faculty of Ethnology and Sciences of Education together with University of Ostrava (Czech Republic), Matej Bel University in Banská Bystrica (Slovakia) in 2009-2010. The international project «*E-learning - as a Road to Communication in a Multicultural Environment*» is intended to serve the following purposes: (1) The popularization of e-learning in academic environments and among students through the organization of the conference the «*Theoretical and Practical Aspects of Distance Learning*», and the workshop «*Distance Course Design Using CLMS MOODLE*». (2) Training prospective teachers to use distance teaching and to utilize e-learning in teaching and preparing them for

<sup>5</sup> <http://www.crue.org>

<sup>6</sup> <http://el.us.edu.pl.weinoe>



the role of a tutor. (3) Development of e-learning postgraduate programmes for teachers in ICT and other fields. (4) Provision of access to educational materials to students, local communities and all those interested, including people with disabilities, people with limited financial resources, residents of small towns and remote areas, in further the European community goal of providing equal opportunity for all citizens in access to knowledge. (5) Development of a working model of an information and educational environment intended to provide support for distance learning and teacher's education in Visegrad Group countries as well as further development of distance learning platforms actually operated by all project partners. (6) Development of distance courses in pedagogy, ICT and other fields. In the near future are planned subsequent to the implementation of joint projects in e-learning and using distance learning platform (Smyrnova-Trybulska, 2012). IRNet is an International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences and the leadership of this project is Poland, Coordinator University of Silesia, prof. Eugenia Smyrnova-Trybulska.

3.B) Portugal: The participation of Portuguese researchers in joint projects is very great and every other year there is an event called the ECI (*Informatics Centers Encounter*) where the technicians and managers of Informatics Centers of the Universities discuss their own experiences and settle on best practices in order to make a better use of the network resources to allow a better use for academic users. Portugal is one of the *Erasmus* and *Erasmus+* programs that allows the mobility of students and teachers and that allows either to take our own experiences abroad and learn absorb new cultures and on the other end to receive new cultural realities and exchange our everyday experiences with the foreign guests.

3.C) Slovakia: The national project DVUI was financed by European structural funds and was executed in 2008-11. The objectives of the project were to design, prepare and execute a modern further education for 1.500 teachers of computer science at primary and secondary schools from all parts of Slovakia, supported by digital technologies, and to equip the participants in education with digital technologies needed for their education which they can further use in teaching process. The professional activities of the project were provided by five universities. Constantine the Philosopher University in Nitra actively participated in the above-mentioned national project. Other actual projects with expected impact to the teachers are Mobile Devices in Education, Mobile Technology in Schools for the 21st Century focused on the use of tablets in primary and secondary schools in STEM, Modern computer science - new methods and forms for effective education and Modern computer science - new methods and forms for effective education Informal learning.

3.D) Spain: Nowadays, universities through Europe are involved in nets of innovation for the fostering and implementation of intercultural and digital competence via the *European K2 Languages* projects. One of these nets is the NELLIP one, the *Network of European Language Labelled Initiatives*, funded by the European Commission in the framework of the *Lifelong Learning Programme* in which the University of Extremadura, and specifically *Gexcall* research group is involved. The *NELLIP Network* has the aim to promote quality in language learning through the application of the quality criteria used to award the *European Language Label*. The *NELLIP Network* nominated significant language learning initiatives having received the *European Language Label* that are consistent with the current political priorities of the European Commission in the field of language learning. Among them, a quantity of case studies and Best Practice are identified. National Reports as well as a Transnational Report are also created in order to increase the quality of language learning enterprises that are being developed in Europe. The *NELLIP Network* also established Guidelines on quality, exploitation and networking in the field of language learning with allusion to the *European Language Label*. Another innovative educational practice is related to the project *FORPROF* promoted by *GIDEX* group. This study aims to analyze the

reality of multicultural aspect in the regional educational sphere (Extremadura, Spain), emphasizing the intercultural education answers provided by the members of the educational community. From the research about the real situation of Intercultural Education in Extremadura and from the exhaustive model analysis from which initial teacher training is based and from which the new social reality in the curriculum is integrated, this project generates a teaching proposal according to the detected needs and the theoretical and historical analysis of the study.

3.E) Russia: Modern development is possible only in a joint venture, for example, within online communities, constructing knowledge workshops, in environment that allows to design own content, evaluate own activities and focus on the experience of colleagues (Noskova, Pavlova, Yakovleva, Sharova, 2014). Nowadays in Russia school teachers show a significant activity in Internet. Examples of teacher's networking can be grouped as professional blogs, teacher's sites, online communities, media channels. Teacher's blogs<sup>7</sup> are the area for the emergence of creative ideas and conceptual projects. Exchanging comments a teacher can optimally quickly find like-minded people. It is important that the virtual space is formed not only around a blogger, but in the whole blogosphere. Entering into a dialogue in one blog, a user gets different opportunities for self-presentation. Among them are: filling the necessary personal profile information, feedback from other users. Blogs offer wide opportunities for self-identification. Blogs are regarded to create collective knowledge, collective semantics, new connections and meta-connections. Online communities and mutual exchange of experience<sup>8</sup>. The aim of the network is the development of content relevant to education and personally meaningful for each participant. Many of them are using the wiki technology. Wiki gives an opportunity to see the work of others (completed tasks), and to compare it with own work. Thus, users can see the advantages and disadvantages, and identify ways to improve results. It is possible to get a sample of work, see all changes and contributions to the work in the final result. Technologies help to integrate useful experience and knowledge in response to a user request, to find the answer for the professional questions, to act in contact with experts or to find like-minded people. The approach of the educational data hubs, for example Linked Educational Cloud<sup>9</sup> is also very effective. The main aim is the identification and promotion of innovative success approaches and educational scenarios. These projects primarily require Web 3.0 technologies to customize their capabilities to the needs of a particular user. Development of new generation of Internet technology in teaching practice can occur only through the understanding of their essence, testing them, discussing in professional society. After that they may be the productively implemented in the educational process.

In the design of the activities in the network environment teachers use the terms of the new collective phenomena of networking, such as «network group», «virtual classroom», «network class», «distributed audience», «online community» and so on. Remote interaction requires significant adaptation of teaching methods and technologies developed and described with reference to the traditional environment. Special attention is paid to the support of students' initiative - new types of network information activities in the electronic environment. The main quality of the designed environment is its network construction principle, which corresponds to the laws of the development of modern information structures. It means that not all information and communication should be and may be predetermined. They arise in the course of interaction, depending on the activity, interest and readiness of participants. It is necessary to take into account the processes, taking place in the self-organizing systems. Therefore, teachers not only plan in detail the interaction in the networked learning community, but also understand the trends and see the processes, which can be influenced (Noskova,

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<sup>7</sup> For example <http://modernpedagog.com/>

<sup>8</sup> <http://nsportal.ru/>

<sup>9</sup> <http://data.linkededucation.org/>

Pavlova, Yakovleva, 2013). In the following table (table 1) are shown the main data from the results described previously:

Table 1. Comparison Units by country

Countries	Comparison Unit 1	Comparison Unit 2	Comparison Unit 3
<b>Poland</b>	The Bologna Declaration (1999), The Lisbon Strategy (Lisbon, 2000). European Commission working document « <i>Memorandum on lifelong learning life</i> ».	Decree No. 66/2012 formally allows one to teach up to 60% of classes in the remote mode. Implementation of a zero tolerance policy on plagiarism and other unethical behaviours.	International projects. Distance learning platform IRNET ( <i>International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences</i> ).
<b>Portugal</b>	New project called « <i>e-U Campus Virtual</i> » (electronic University Virtual Campus), network eduroam.	Fiscal benefits for buyers of new technologies equipment communications become cheaper and faster, and with the spread of DSL or cable technologies. Courses for qualified unemployed that would allow them to acquire competences in new technologies in order to return to the labor market with new competences.	ECI ( <i>Informatics Centers Encounter</i> ) where the technicians and managers of Informatics Centers of the Universities discuss their own experiences and settle on best practices in order to make a better use of the network.
<b>Slovakia</b>	European Committee accepted a new <i>Digital Agenda for Europe</i> .	Using of ICT tools was conditioned by execution of a project of transformation of traditional school into a modern, so called Global school of the third millennium.	The national project DVUI was financed by European structural funds and was executed in 2008 - 2011. The objectives of the project were to design, prepare and execute a modern further education for 1500 teachers of computer science at primary and secondary schools from all parts of Slovakia.

Countries	Comparison Unit 1	Comparison Unit 2	Comparison Unit 3
Spain	<i>Spanish Agency for International Cooperation for Development (AECID). Latin American Network of Educational Technology (RIATE). ICT to education as a tool of improving teaching and learning quality.</i>	<i>«Programa Escuela 2.0» to develop digital classrooms for the XXI century, provided with technological infrastructure and connectivity. The crisis is a problem to develop this kind of objectives. The Spanish University Rectors Association (CRUE) emphasize some strategic lines on the international dimension of the university in ICT issues.</i>	<i>NELLIP Network has the aim to promote quality in language learning through the application of the quality criteria used to award the European Language Label project FORPROF promotes by GIDEX group tries to analyze interculturality in Education in Extremadura.</i>
Russia	Not aplicable.	Federal law «On education» officially provides the ability to use e-learning and distance learning technologies. Federal Initiative «Our New School» names the main characteristics of students as citizens.	Networking can be grouped as professional blogs, teacher's sites, online communities, media channels. The approach of the educational data hubs, for example <i>Linked Educational Cloud</i> <sup>10</sup>

## 5. Conclusions

Along this paper a comparative study has been developed in order to achieve a comparative study that might help to develop a holistic vision between Spain, Poland, Slovak, Portugal and Russia related to the application of international policies or initiatives in digital and intercultural competence in Education and in teacher training. Also it has been studied the implementation of national policies or initiatives from the government in digital and intercultural competence in Education and in teacher training. Finally it persecutes to share particular innovative educational practices and/or research projects in order to foster intercultural and digital competence in university training and in teacher training.

We would like to point out that, firstly, that International Policy and European Policy are fundamental for its members; such as the Bologna Declaration (1999), The Lisbon Strategy (Lisbon, 2000) & European Commission working document «*Memorandum on lifelong learning life*». On the other hand, more Latin countries like Portugal and Spain also abide by Latin-Americans policies on technology and educational development, like the International Cooperation and Development Union AECID. And *The Iberoamerican Network for Educational Technology* (RIATE), ICT is encouraged from the perspective that they become learning objects and an indispensable tool in education. On the other hand, the EDUROAM initiative funded by GEANT 3 and operated by several European academic networks and TERENA stands is an initiative expands the mobility space to the European academic world.

<sup>10</sup> <http://data.linkededucation.org/>

Nationally, we can highlight various initiatives, some of them directed at university, and others to the field of primary and secondary education. At the university level, it is remarkable the perception of Poland, including a law that allows one to teach up to 60% of classes in the remote mode and decrees implementation of a zero tolerance policy on plagiarism and other unethical Behaviours. School-wide initiatives, promote a new kind of school in Spain has been called Escuela 2.0., While in Slovakia they speak of «*Global school of the third millennium*» and Russia of «*Our New School*» to name the main characteristics of students as citizens. All these initiatives aim to make an adapted modern technologies classroom enabling connectivity and teachers must be prepared for this school. In this sense, Portuguese Courses for qualified unemployed promote course that would allow them to acquire competences in new technologies in order to return to the labor market with new competences.

Finally, it is noted that at the level of individual initiatives, projects financed with European or national funds are responsible for promoting change and intercultural training and ICT. In fact some that stand out are NELLIP Network to promote quality in language learning through the application of the quality criteria used to award the European Language Label, the project FORPROF Promoted by GIDEX to analyze multiculturalism in Education in Extremadura. Other Promote the Distance Learning Platform project, and International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences (IRNET). Finally, DVUI to design, prepare and execute a 1.500 modern further education for teachers of computer science at primary and secondary schools from all parts of Slovakia. Also networking as professional blogs, teacher's sites, Online Communities, media channels, etc.

Ultimately we see that the countries participating in the study (Spain, Poland, Slovak, Russia) despite its idiosyncrasies, walk towards education and the school of the future, looking for connectivity in classrooms and technological integration of resources. To do this, it requires a highly trained teachers, which are being designed to promote training schemes for teacher training school of the future. In this regard, the various countries conduct projects that integrate innovative technologies and education from the perspective of internationalization and multiculturalism, so it is observed that countries have to work together to set the best possible educational practices. However, limitations are observed in the study concerning the comparison units, which as future research can be independent and well-defined variables and criteria, to offer very specific information of unique aspects of a comparative study of these characteristics.

This teacher training would enhance virtual networks and virtual learning communities as far as teacher training is concerned, because like Priegue (2011) we consider them useful for the development of digital skills and intercultural. Among other reasons because working for a common goal, so to take shared responsibility for possible differences between participants, working towards common goals are relegated. Also thanks to this network it is made possible and knowledge of different cultural and social realities contributes to building a culture of diversity, making a positive assessment of it. This exchange ultimately facilitates different approach to their own opinions, which in the words of Borrero López (2011) is the most appropriate model for teacher training aimed at the acquisition of intercultural competence. So is it possible that teachers acquire skills that enable you to interact with others, accepting other perspectives and perceptions, being aware of critical and reflective of the cultural diversity around us so. However, intercultural competence of teachers not only has to do with the acceptance of cultural diversity but also with the emotional dimension, the values of closeness and respect towards pupils and their families.

The acquisition of these necessary skills for the development of teachers in the Digital Society, both personally and professionally, could be accomplished by the use of collaborative teaching methods and

setting times and virtual spaces for interaction between teachers, which favor shared knowledge building through Personal Learning Environments and Personal Learning Networks (Gutierrez & Becerra, 2014).

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## 7. Reconocimientos

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